This edited book presents contributions from three different areas: cloud computing, digital mess and business algorithms on a single platform, i.e. Digital Business. The book is divided into four sections: (i) Digital Business Transformation, (ii) Cloud Computing, (iii) IOT & Mobility, and (iv) Information Management & Social Media, which are part of a holistic approach to information management and connecting the value chains of businesses to derive more throughput in the entire business ecosystem. Digital business is a niche area of computer science and business management, and its dimension is vast—it includes technologies such as cloud computing, Internet of Things, mobile platforms, big data applied in areas like ERP, data mining and business intelligence. Digital technologies have also challenged existing business models and will continue to do so. One of the key driving forces is the capacity of innovation and the commercialization of information and communication technologies. Providing insights into the new paradigm of digital business, the book is a valuable resource for research scholars, academics and professionals. In The Digital Hand, James W. Cortada combines detailed analysis with narrative history to provide a broad overview of computing's role in sixteen industries, accounting for nearly half of the U.S. economy. Beginning in 1950, when commercial applications of digital technology began to appear, Cortada examines the ways different industries adopted new technologies, as well as the ways their innovative applications influenced other industries and the U.S economy. In addition, to this account of computers' impact on industry, Cortada also demonstrates how industries themselves influenced the nature of digital technology. Managers, economists, and anyone interested in the history of modern business will appreciate this historical analysis of digital technology's many roles and its future possibilities in a wide array of industries. A detailed picture of what the infrastructure of the Information Age really looks like and how we got there, The Digital Hand is a sweeping survey of how computers transformed the American economy. The Second Edition of this critically-acclaimed text continues the standard of excellence set in the first edition by providing a thorough introduction to the fundamentals of telecommunication networks without bogging you down in complex technical jargon or math. Although focusing on the basics, the book has been thoroughly updated with the latest advances in the field, including a new chapter on metropolitan area networks (MANs) and new sections on mobile Fi, ZigBee and ultrawideband. You'll learn which choices are now available to an organization, how to evaluate them and how to develop strategies that achieve the best balance among cost, security and performance factors for voice, data, and image communication. Logical development of the concepts and applications of traffic stream theory and operations analysis. Includes many worked examples and homework problems. Through analyses, experimental results, and worked-out numerical examples, microscale and nanoscale heat transfer: fundamentals and engineering applications explores the methods and observations of thermophysical phenomena in size-affected domains. Compiling the most relevant findings from the literature, along with results from their own research, this book is a printed edition of the Special Issue "Advances in Vibroacoustics and Aeroacoustics of Aeronautical and Automotive Systems" that was published in Applied Sciences. This book continues the tradition of its predecessors "Aerodynamics, Communication and Cybernetics in Science and Engineering 2009/2010 and 2011/2012" and includes a representative selection of scientific publications from researchers at the institute cluster IM Anagement in M echanical Engineering
ZLW - Center for Learning and Knowledge Management IfU - Associated Institute for Management Cybernetics e.V. Faculty of Mechanical Engineering, RWTH Aachen University The book presents a range of innovative fields of application, including: cognitive systems, cyber-physical production systems, robotics, automation technology, machine learning, natural language processing, data mining, predictive data analytics, visual analytics, innovation and diversity management, demographic models, virtual and remote laboratories, virtual and augmented realities, multimedia learning environments, organizational development and management cybernetics. The contributions selected reflect the fundamental paradigm shift toward an increasingly interdisciplinary research world - which has always been both the basis and spirit of the institute clusterIMA/ZLW & IfU. This two-volume set LNCS 11581 and 11582 constitutes the thoroughly refereed proceedings of the 10th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management, DHM 2019, which was held as part of the 21st HCI International Conference, HCII 2019, in Orlando, FL, USA, in July 2019. The total of 1275 papers and 209 posters included in the 35 HCII 2019 proceedings volumes were carefully reviewed and selected from 5029 submissions. DHM 2019 includes a total of 77 papers; they were organized in topical sections named: Part I, Human Body and Motion: Anthropometry and computer aided ergonomics; motion prediction and motion capture; work modelling and industrial applications; risk assessment and safety. Part II, Healthcare Applications: Models in healthcare; quality of life technologies; health dialogues; health games and social communities. For courses in basic electronics and electronic devices and circuits A user-friendly, hands-on introduction to electronic devices filled with practical applications and software simulation Electronic Devices (Conventional Current Version), 10/e, provides a solid foundation in basic analog electronics and a thorough introduction to analog integrated circuits and programmable devices. The text identifies the circuits and components within a system, helping students see how the circuit relates to the overall system function. Full-color photos and illustrations and easy-to-follow worked examples support the text's strong emphasis on real-world application and troubleshooting. Updated throughout, the Tenth Edition features selected circuits key to Multisim V14 and LT Spice files so that students learn how to simulate, analyze, and troubleshoot using the latest circuit simulation software. Additionally, an entirely new Chapter 18, "Communication Devices and Methods," introduces communication devices and systems. Student resources are available on the companion website www.pearsonhighered.com/careersresources/. Radiologic technologists play an important role in the care and management of patients undergoing advanced imaging procedures. This new edition provides the up-to-date information and thorough coverage you need to understand the physical principles of computed tomography (CT) and safely produce high-quality images. You'll gain valuable knowledge about the practice of CT scanning, effective communication with other medical personnel, and sectional anatomic images as they relate to CT. Comprehensively covers CT at just the right depth for technologists - going beyond superficial treatment to accommodate all the major advances in CT. One complete CT resource covers what you need to know! Brings you up to date with the latest in multi-slice spiral CT and its applications - the only text to include full coverage of this important topic. Features a chapter devoted to quality control testing of CT scanners (both spiral CT and conventional scan-and-stop), helping you achieve and maintain high quality control standards. Provides the latest information on: advances in volume CT scanning; CT fluoroscopy; multi-slice spiral/helical CT; and multi-slice applications such as 3-D imaging, CT angiography, and virtual reality imaging (endoscopy) - all with excellent coverage of state-of-the-art principles, instrumentation, clinical applications and quality control. Two new chapters cover recent developments and important principles of multislice CT and PET/CT, giving you in-depth coverage of these quickly emerging aspects of CT. Nearly 100 new line drawings and images illustrate difficult concepts, helping you learn and retain information. All-new material updates you on today's CT scanners, CT and PACS, image quality and quality control for multislice CT scanners, and clinical applications. Considers the application of modern control engineering on digital computers with a view to improving productivity and product quality, easing supervision of industrial processes and reducing energy consumption and pollution. The topics covered may be divided into two main subject areas: (1) applications of digital control - in the chemical and oil industries, in water turbines, energy and power systems, robotics and manufacturing, cement, metallurgical processes, traffic control, heating and cooling; (2) systems theoretical aspects of digital control - adaptive systems, control aspects, multivariable systems, optimization and reliability, modelling and identification, real-time software and languages, distributed systems and data networks. Contains 84 papers. Vols. 1- are the proceedings of the 1st-symposiums held 1971-Die «Macht der Vielen» hat die Tektonik der Gegenwartskultur maßgeblich verschoben. Der Alttaggebrauch der Sozialen Medien hat eine neuartige Beteiligungs- und Vernetzungskultur hervorgebracht - mit einer Vielzahl von partizipativen und kollaborativen Projekten, die sowohl ökonomisch verwertbar als auch normativ aufgeladen sind. Die derart in Prozesse der Medialisierung und Visualisierung eingebundenen Kollektive sind im populärikulturellen M Mainstream verankert und können nur dann verstanden werden, wenn sie im (genealogischen) Kontext von M edientechnik und visueller Kultur thematisiert werden. Ramón Reicherts Studien zeigen, dass die »Macht der Vielen« der sozialen Funktion der digitalen Vernetzung entspringt. Folglich können Soziale Medien als Selbstbeschreibung.
Updated with chapters on ventilating and exhausting systems and HVAC systems, this third edition of a bestseller covers the range of HVAC systems. The coverages is into components and controls for air, water, heating, ventilating, and air conditioning and readers will learn why one component or system may be chosen over another. This master volume covers the full range of HVAC systems used in today's facilities. Comprehensive in scope, the text is intended to provide the reader with a clear understanding of how HVAC systems operate, as well as how to select the right system and system components to achieve optimum performance and efficiency for a particular application. You'll learn the specific ways in which each system, subsystem or component contributes to providing the desired indoor environment, as well as what factors have an impact on energy conservation, indoor air quality and cost. Examined in detail are compressors, water chillers, fans and fan drives, air distribution and variable air volume, pumps and water distribution, controls and their components, heat recovery, and energy conservation strategies. Also covered are heat flow fundamentals, as well as heat flow calculations used in selecting equipment and determining system operating performance and costs. Traditionally, fluid mixing and the related multiphase contacting processes have always been regarded as an empirical technology. Many aspects of mixing, dispersing and contacting were related to power draw, but understanding of the phenomena was limited or qualitative at the most. In particular during the last decade, however, plant operation targets have tightened and product specifications have become stricter. The public awareness as to safety and environmental hygiene has increased. The drive towards larger degrees of sustainability in the process industries has urged for lower amounts of solvents and for higher yields and higher selectivities in chemical reactors. All this has resulted in a market pull: the need for more detailed insights in flow phenomena and processes and for better verifiable design and operation methods. Developments in miniaturisation of sensors and circuits as well as in computer technology have rendered leaps possible in computer simulation and animation and in measuring and monitoring techniques. This volume encourages a leap forward in the field of mixing by the current, overwhelming wealth of sophisticated measuring and computational techniques. This leap may be made possible by modern instrumentation, signal and data analysis, field reconstruction algorithms, computational modelling techniques and numerical recipes. Now in its Third Edition, the Artech House bestseller, Fundamentals and Applications of Microfluidics, provides engineers and students with the most complete and current coverage of this cutting-edge field. This revised and expanded edition provides updated discussions throughout and features critical new material on microfluidic power sources, sensors, cell separation, organ-on-chip and drug delivery systems, 3D culture devices, droplet-based chemical synthesis, paper-based microfluidics for point-of-care, ion concentration polarization, micro-optofluidics and micro-magnetofluidics. The book shows how to take advantage of the performance benefits of microfluidics and serves as an instant reference for state-of-the-art microfluidics technology and applications. Readers find discussions on a wide range of applications, including fluid control devices, gas and fluid measurement devices, medical testing equipment, and implantable drug pumps. Professionals get practical guidance in choosing the best fabrication and enabling technology for a specific microfluidic application, and learn how to design a microfluidic device. Moreover, engineers get simple calculations, ready-to-use data tables, and rules of thumb that help them make design decisions and determine device characteristics quickly. Now in its eleventh edition, DeGarmo's Materials and Processes in Manufacturing has been a market-leading text on manufacturing and manufacturing processes courses for more than fifty years. Authors J. T. Black and Ron Kohser have continued this book's long and distinguished tradition of exceedingly clear presentation and highly practical approach to material and processes, presenting mathematical models and analytical equations only when they enhance the basic understanding of the material. Completely revised and updated to reflect all current practices, standards, and materials, the eleventh edition has new coverage of additive manufacturing, lean engineering, and processes related to ceramics, polymers, and plastics. This volume presents the proceedings of the 10th International Workshop on Combinatorial Image Analysis, held December 1–3, 2004, in Auckland, New Zealand. Prior meetings took place in Paris (France, 1991), Ube (Japan, 1992), Washington DC (USA, 1994), Lyon (France, 1995), Hiroshima (Japan, 1997), Madras (India, 1999), Caen (France, 2000), Philadelphia (USA, 2001), and L’ermo (Italy, 2003). For this workshop we received 86 submitted papers from 23 countries. Each paper was evaluated by at least two independent referees. We selected 55 papers for the conference. Three invited lectures by Vladimir Kovalevsky (Berlin), Akiro Nakamura (Hiroshima), and Maurice Nivat (Paris) completed the program. Conference papers are presented in this volume under the following topical part titles: discrete tomography (3 papers), combinatorics and computational models (6), combinatorial algorithms (6), combinatorial mathematics (4), digital topology (7), digital geometry (7), approximation of digital sets by curves and surfaces (5), algebraic approaches (5), fuzzy image analysis (2), image segmentation (6), and matching and recognition (7). These subjects are dealt with in the context of digital image analysis or computer vision. This book constitutes the refereed proceedings of the 10th Scandinavian Workshop on Algorithm Theory,
SWAT 2006, held in Riga, Latvia, in July 2006. The proceedings includes 36 revised full papers presented together with 3 invited papers, addressing issues of theoretical algorithmics and applications in various fields including graph algorithms, computational geometry, scheduling, approximation algorithms, network algorithms, data storage and manipulation, combinatorics, sorting, searching, online algorithms, optimization, and more. This book constitutes the refereed proceedings of 10 international workshops held in conjunction with the merged 1998 IPPS/SPDP symposia, held in Orlando, Florida, US in March/April 1998. The volume comprises 118 revised full papers presenting cutting-edge research or work in progress. In accordance with the workshops covered, the papers are organized in topical sections on reconfigurable architectures, run-time systems for parallel programming, biologically inspired solutions to parallel processing problems, randomized parallel computing, solving combinatorial optimization problems in parallel, PC based networks of workstations, fault-tolerant parallel and distributed systems, formal methods for parallel programming, embedded HPC systems and applications, and parallel and distributed real-time systems. Multi-phase flows are part of our natural environment such as tornadoes, typhoons, air and water pollution and volcanic activities as well as part of industrial technology such as power plants, combustion engines, propulsion systems, or chemical and biological industry. The industrial use of multi-phase systems requires analytical and numerical strategies for predicting their behavior. In its third extended edition this monograph contains theory, methods and practical experience for describing complex transient multi-phase processes in arbitrary geometrical configurations, providing a systematic presentation of the theory and practice of numerical multi-phase fluid dynamics. In the present first volume the fundamentals of multiphase dynamics are provided. This third edition includes various updates, extensions and improvements in all book chapters. This book is Open Access under a CC BY licence. This book constitutes the proceedings of the 22nd International Conference on Fundamental Approaches to Software Engineering, FASE 2019, which took place in Prague, Czech Republic in April 2019, held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2019. The 24 papers presented in this volume were carefully reviewed and selected from 94 submissions. The papers are organized in topical sections named: software verification; model-driven development and model transformation; software evolution and requirements engineering; specification, design, and implementation of particular classes of systems; and software testing. Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database. This volume contains an archival record of the NATO Advanced Institute on Microscale Heat Transfer - Fundamental and Applications in Biological and Microelectromechanical Systems held in Çesme – Izmir, Turkey, July 18–30, 2004. The ASIs are intended to be high-level teaching activity in scientific and technical areas of current concern. In this volume, the reader may find interesting chapters and various Microscale Heat Transfer Fundamental and Applications. The growing use of electronics, in both military and civilian applications has led to the widespread recognition for need of thermal packaging and management. The use of higher densities and frequencies in microelectronic circuits for computers are increasing day by day. They require effective cooling due to heat generated that is to be dissipated from a relatively low surface area. Hence, the development of efficient cooling techniques for integrated circuit chips is one of the important contemporary applications of Microscale Heat Transfer which has received much attention for cooling of high power electronics and applications in biomechanical and aerospace industries. Microelectromechanical systems are subject of increasing active research in a widening field of discipline. These topics and others are the main themes of this Institute. Rivers form one of the lifelines in our society by providing essential services such as availability of fresh water, navigation, energy, ecosystem services, and flood conveyance. Because of this essential role, mankind has interfered continuously in order to benefit most and at the same time avoid adverse consequences such as flood risk and droughts. This has resulted in often highly engineered rivers with a narrow set of functions. In the last decades rivers are increasingly considered in a more holistic manner as a system with a multitude of interdependent processes. River research and engineering has therefore added to the river fundamentals also themes like ecohydrodraulics, consequences of climate change, and urbanisation. River Flow 2020 contains the contributions presented at the 10th conference on Fluvial Hydraulics, River Flow 2020, organised under the auspices of the Committee on Fluvial Hydraulics of the International Association for Hydro-Environment Engineering and Research (IAHR). What should have been a lively physical gathering of researchers, students and practitioners, was converted into an online event as the COVID-19 pandemic hindered international traveling and large gatherings of people. Nevertheless, the fluvial hydraulics community showed their interest and to be very much alive with a high number of participations for such event. Since its first edition in 2002, in Louvain-la-Neuve, this series of conferences has found a large and loyal audience in the river research and engineering community while being also attractive to the new researchers and young professionals. This is highlighted by the large number of contributions applying for the Coleman award for young researchers, and also by the number of applications and attendants to the Master Classes which are aimed at young researchers and students. River Flow 2020 aims to provide an updated overview of the ongoing research in this
wide range of topics, and contains five major themes which are focus of research in the fluvial environment: river fundamentals, the digital river, the healthy river, extreme events and rivers under pressure. Other highlights of River Flow 2020 include the substantial number of interdisciplinary subthemes and sessions of special interest. The contributions will therefore be of interest to academics in hydraulics, hydrology and environmental engineering as well as practitioners that would like to be updated about the newest findings and hot themes in river research and engineering. Fundamentals of Sleep Technology provides a thorough understanding of the use of polysomnography and other technologies in the evaluation and management of sleep disorders. Coverage includes in-depth reviews of the neurophysiology and cardiopulmonary aspects of sleep, along with the pathophysiology of sleep disorders. Detailed sections on polysomnography include recording procedures, identifying and scoring sleep stages and sleep-related events, and report generation. Chapters discuss therapeutic interventions including positive airway pressure, supplemental oxygen, surgical and pharmacologic treatments, and patient education. A section focuses on pediatric sleep disorders and polysomnography. Also included are chapters on establishing and managing a sleep center and accrediting a sleep program. Fundamentals of Sleep Technology is endorsed by American Association of Sleep Technologists (AAST). AAST committees oversaw the development of this book, defining the table of contents, recruiting the Editors, and providing most of the contributors. For courses in basic electronics and electronic devices and circuits A user-friendly, hands-on introduction to electronic devices filled with practical applications and software simulation Electronic Devices (Electron Flow Version), 10/e, provides a solid foundation in basic analog electronics and a thorough introduction to analog integrated circuits and programmable devices. The text identifies the circuits and components within a system, helping students see how the circuit relates to the overall system function. Full-color photos and illustrations and easy-to-follow worked examples support the text's strong emphasis on real-world application and troubleshooting. Updated throughout, the Tenth Edition features selected circuits keyed to Multisim V14 and LT Spice files so that students learn how to simulate, analyze, and troubleshoot using the latest circuit simulation software. Additionally, an entirely new Chapter 18, “Communication Devices and Methods,” introduces communication devices and systems. As markets become more dynamic and competitive, companies must reconsider how they view inventory and make changes to their production and inventory systems. They must begin to think outside the classical box and develop a new paradigm of inventory management. Exploring the trend away from classical models based on economic order quantities to dependent demand systems, Inventory Management: Non-Classical Views comes as a just-in-time resource. Explore the new role of inventories in business enterprises This book discusses a new paradigm for inventory management that is responsive to dynamic changes in the economy. It explores: Inventory systems that provide flexibility Inventory performance measures other than using cost as a means to control inventory Inventory as a contributor to customer value creation, rather than a liability The book also examines why energy and the environment are to be considered in inventory decisions, the non-classical application of inventory management in fields such as healthcare and disaster relief, and non-classical approaches to measuring the performance of inventory such as information theory, fuzzy sets, and thermodynamics. While many factors may change, one certainty is that the global economy is becoming increasingly dynamic. Planting the seeds for new research in inventory control and management, this book outlines the evolving role of inventories in business enterprises. It explores how to create inventory management as a tool for continued success regardless of market fluctuations and economic variances. Strategic Adoption of Technological Innovations brings together research from practitioners on the development, use, and importance of information technology in order to achieve organizational performance. This comprehensive collection is useful for academicians, scholars, researchers and other industry professionals to provide an understanding of strategy and use of information systems in organizations and entities. This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. For courses in basic electronics and electronic devices and circuits A user-friendly, hands-on introduction to electronic devices filled with practical applications and software simulation Electronic Devices (Electron Flow Version), 10/e, provides a solid foundation in basic analog electronics and a thorough introduction to analog integrated circuits and programmable devices. The text identifies the circuits and components within a system, helping students see how the circuit relates to the overall system function. Full-color photos and illustrations and easy-to-follow worked examples support the text’s strong emphasis on real-world application and troubleshooting. Updated throughout, the Tenth Edition features selected circuits keyed to Multisim V14 and LT Spice files so that students learn how to simulate, analyze, and troubleshoot using the latest circuit simulation software. Additionally, an entirely new Chapter 18, “Communication Devices and Methods,” introduces communication devices and systems. Der VDI-Wärmeatlas ist nach wie vor ein unentbehrliches Arbeitsmittel für jeden Praktiker, die Entwicklung der Technik und die Entwicklung von Verfahrenstechnischen Anlagen. Für diese 10. Auflage wurden alle Beiträge einem umfassenden
This volume highlights key challenges for fluid-flow prediction in carbonate reservoirs, the approaches currently employed to address these challenges and developments in fundamental science and technology. The papers span methods and case studies that highlight workflows and emerging technologies in the fields of geology, geophysics, petrophysics, reservoir modelling and computer science. Topics include: detailed pore-scale studies that explore fundamental processes and applications of imaging and flow modelling at the pore scale; case studies of diagenetic processes with complementary perspectives from reactive transport modelling; novel methods for rock typing; petrophysical studies that investigate the impact of diagenesis and fault-rock properties on acoustic signatures; mechanical modelling and seismic imaging of faults in carbonate rocks; modelling geological influences on seismic anisotropy; novel approaches to geological modelling; methods to represent key geological details in reservoir simulations and advances in computer visualization, analytics and interactions for geoscience and engineering.

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